

In the claims:

Claims 1-38 (Cancelled)

39. (New) A method for integrated synthesis and analyte determination on a support, comprising the steps of:

- (a) providing a support body;
- (b) passing a liquid with, present therein, receptors or building blocks for synthesizing polymeric receptors over a support,
- (c) site- or/and time-specifically immobilizing the receptors or receptor building blocks in each case on predetermined positions on the support, the synthesis and analyte determination being carried out in an integrated apparatus, with the synthesis or/and the analyte determination process being monitored and controlled in any number of positions on the support.
- (d) where appropriate, repeating steps (b) and (c) until the required receptors have been synthesized in each case on the predetermined positions on the support,
- (e) bringing the support into contact with a sample containing analytes and
- (f) determining the analytes via their binding to the receptors immobilized on the support.

40. (New) The method as claimed in claim 39, characterized in that an integrated apparatus comprising a programmable light source matrix, a detector matrix, a support arranged between light source matrix and detector matrix, and means for supplying fluids into the support and for discharging fluids from the support is used.

41. (New) The method as claimed in claim 39, characterized in that the analyte is removed again from the support after the determination.

42. (New) The method as claimed in claim 39, characterized in that a plurality of synthesis/analyte determination cycles is carried out, with the receptors for a subsequent cycle

being synthesized on the basis of the information from a preceding cycle.

43. (New) The method as claimed in claim 42, characterized in that an extension of the receptors from the preceding cycle takes place for the subsequent cycle.

44. (New) The method as claimed in claim 42, characterized in that a new support with receptors which are modified compared with the preceding cycle is synthesized for the subsequent cycle.

45. (New) The method as claimed in claim 44, characterized in that the modification of the receptors comprises a change in the sequence or/and an exclusion of negative receptors from the preceding cycle.

46. (New) The method as claimed in claim 39, characterized in that a planar support is used.

47. (New) The method as claimed in claim 39, characterized in that a support with a large number of channels is used.

48. (New) The method as claimed in claim 39, characterized in that a plurality of supports is used for a synthesis/analyte determination cycle.

49. (New) The method as claimed in claim 48, characterized in that the plurality of supports is synthesized and analyzed in different detection apparatuses between which there are information technology links but which may be spatially separated from one another.

50. (New) The method as claimed in claim 47, characterized in that a support comprising a large number of channels, a large number of different receptors being immobilized in the channels, is used.

51. (New) The method as claimed in claim 50, characterized in that the support is optically transparent at least in the region of the reaction regions.

52. (New) The method as claimed in claim 50, characterized in that a reagent kit comprising the support and building blocks for synthesizing polymeric receptors on the support is employed.

53. (New) The method as claimed in claim 40, characterized in that the apparatus additionally comprises means for deprotection of reaction components on the support.

54. (New) The method as claimed in claim 40, characterized in that the apparatus additionally comprises electronic control means.